Electronic Supplementary Material (ESI) for Nanoscale.

Supporting Information

Multi-components composed Cu_2O@$FePO_4$ core-cage structure to jointly promote fast electron transfer toward highly sensitive *in situ* detection of nitric oxide

Yuhuan Zhang,[a,c] Shi-Yu Lu,[a,c] Zhuanzhuan Shi,[a,c] Zhi Liang Zhao,[a,c] Qian Liu,[a,c] Jie-Chang Gao,[a,c] Taotao Liang,[a,c] Zhuo Zou,[a,c] Chang Ming Li*[a,b,c]

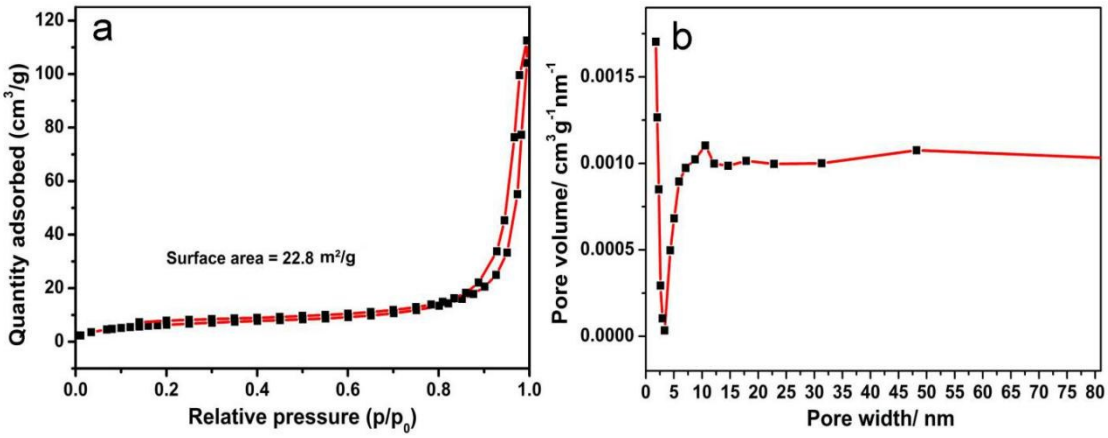

Fig. S1. (a) Nitrogen adsorption-desorption and (b) pore-size distribution curves of Cu_2O@$FePO_4$CC.

*Corresponding author at: Institute for Clean Energy and Advanced Materials, Southwest University, Chongqing 400715, China. Fax: +86 23 68254969.

E-mail address: ecmli@swu.edu.cn (C.M. Li).

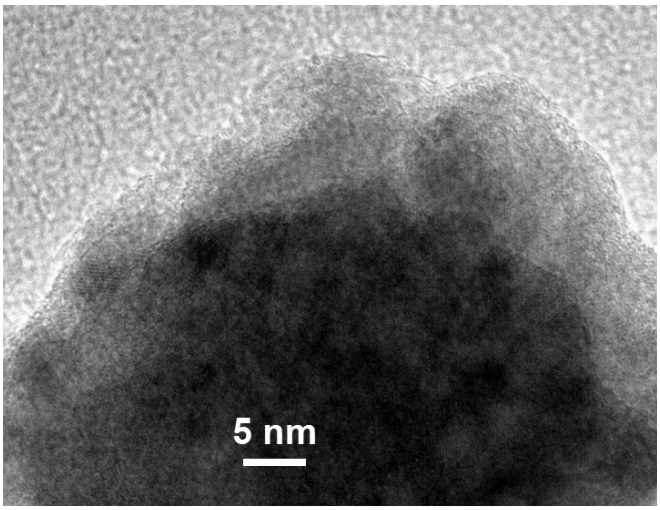

Fig. S2. HRTEM image of Cu_2O@$FePO_4$CC.

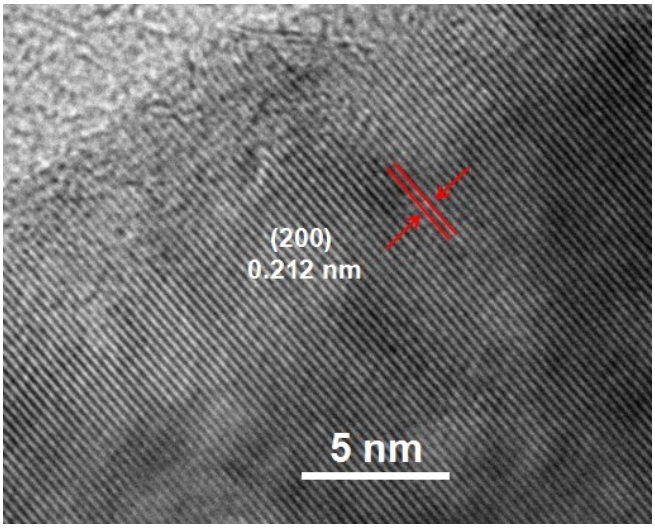

Fig. S3. HRTEM image of Cu_2O.

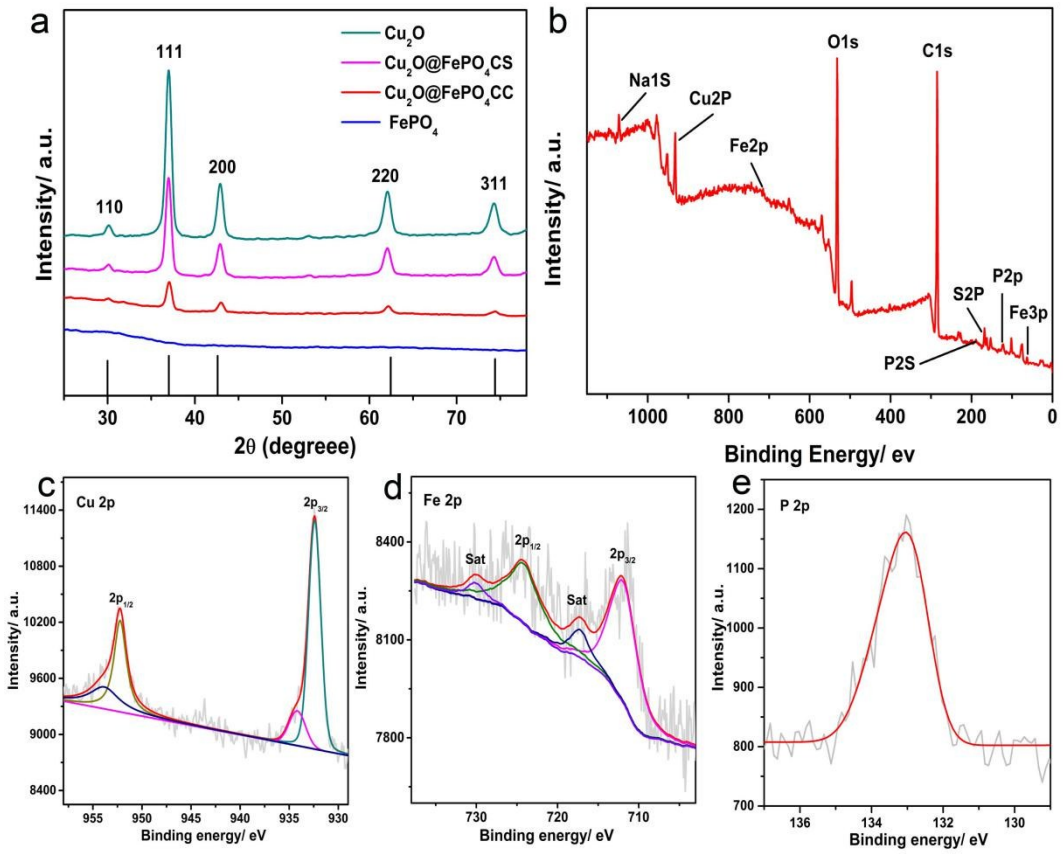

Fig. S4. (a) XRD patterns of Cu_2O, Cu_2O@$FePO_4$CS, Cu_2O@$FePO_4$CC and $FePO_4$. (b) XPS survey spectrum of Cu_2O@$FePO_4$CC and corresponding high-resolution spectra in (c) Cu 2p, (d) Fe 2p and (e) P 2p regions.

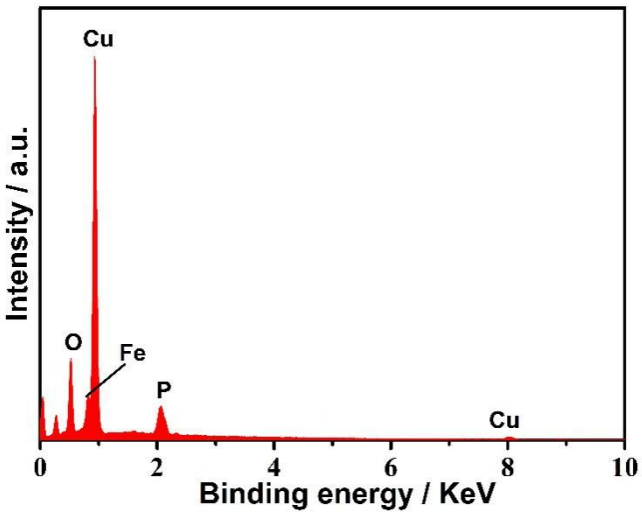

Fig. S5. EDS spectrum of Cu_2O@$FePO_4$CC.

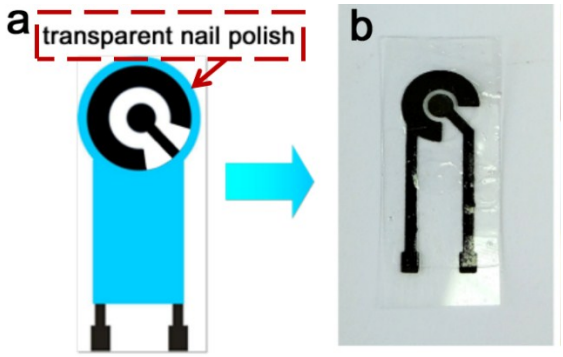

Fig. S6. (a) Scheme and (b)optical image of SPE.

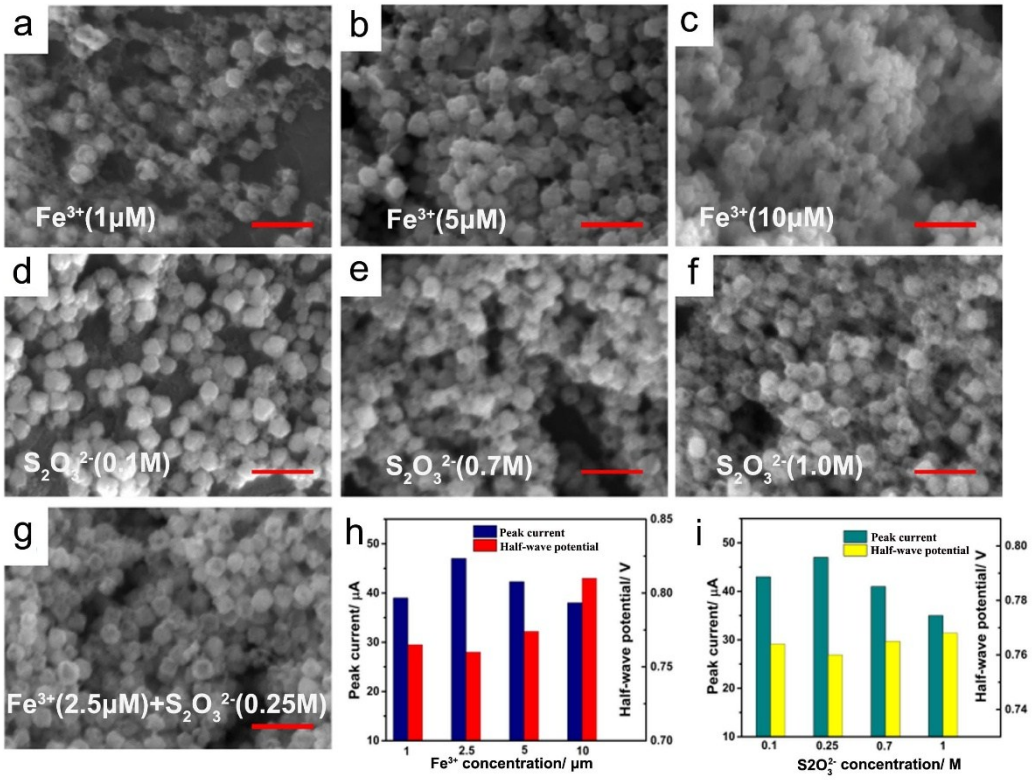

Fig. S7. SEM images of Cu_2O@$FePO_4$CC materials synthesized with various Fe^{3+} concentrations: (a) 1.0 μM, (b) 5.0 μM, (c) 10.0 μM, (g) 2.5 μM. And the SEM images of Cu_2O@$FePO_4$CC materials synthesized with different $S_2O_3^{2-}$ concentrations: (d) 0.1 M, (e) 0.7 M, (f) 1 M, (g) 0.25 μM. Effect of the different addition of Fe^{3+} (h) and $S_2O_3^{2-}$ (i) on the performance of Cu_2O@$FePO_4$CC/SPE in CV responses, peak currents or half-wave potentials. (Scale bar is equal to 200 nm for every image)

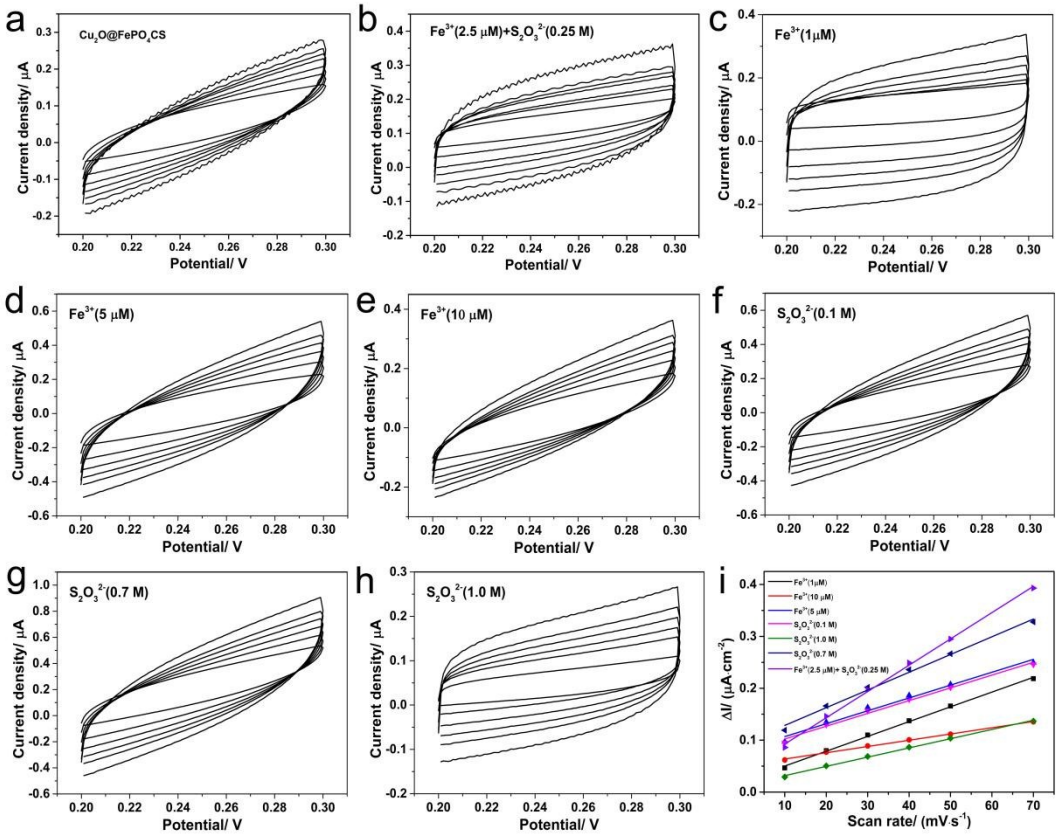

Fig. S8. CV curves of Cu_2O@$FePO_4$CS (a) and Cu_2O@$FePO_4$CC synthesized under different conditions of (b) 2.5 μM, (c) 1 μM, (d) 5 μM and (e)10 μM Fe^{3+} concentrations; (f) and (g) and (h) are the CV curves f Cu_2O@$FePO_4$CC synthesized under 0.1 M, 0.7 M and 1.0 M $S_2O_3^{2-}$; the potential window is 0.2-0.3 V and the scan rates vary from 10, 20, 30, 40, 50 to70 mV s^{-1}. (f) Capacitive currents at 0.25 V as a function of scan rates for different materials.

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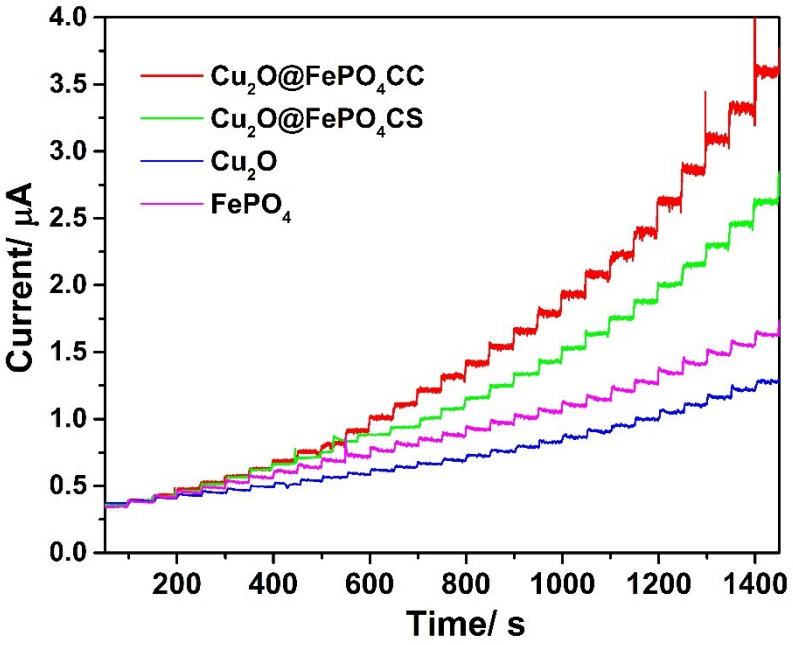

Fig. S9. Amperometric curve of Cu_2O@$FePO_4$CC/SPE, Cu_2O@$FePO_4$CS/SPE, Cu_2O/SPE, $FePO_4$/SPE upon continuous injection of NO at 0.97 V in 0.01 M PBS (pH 7.4).

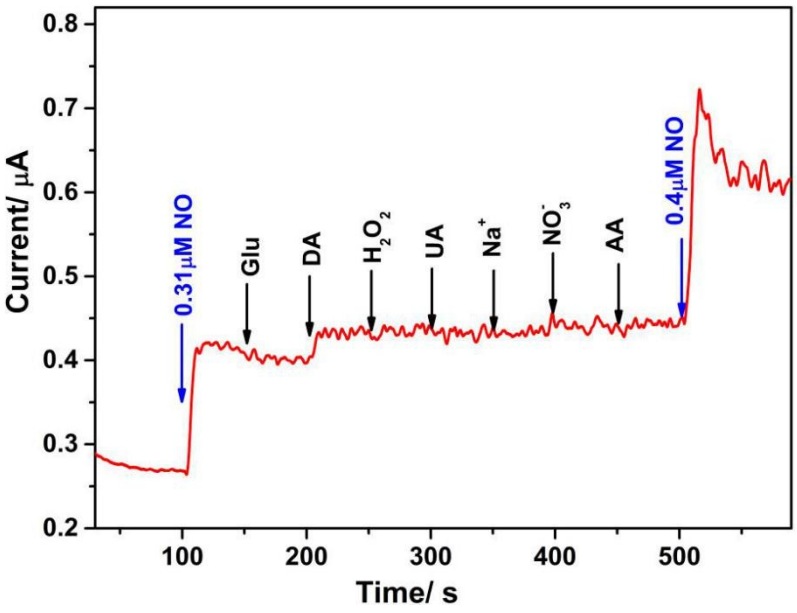

Fig. S10. Selectivity of Cu_2O@$FePO_4$CC/SPE.